

Amendments to the claims:

1. **(Previously presented)** A microfluidic analytical device comprising:
 a microfluidic separation column containing stationary phase material and adapted to perform a pressure-driven chromatographic separation process;
 an optical detection region disposed downstream of the microfluidic separation column, the optical detection region being substantially free of stationary phase material and being bounded by at least one substantially optically transmissive material; and
 a substantially planar porous membrane disposed downstream of the optical detection region, the porous membrane permitting liquid flow therethrough at an operating pressure.
2. **(Cancelled)**
3. **(Previously presented)** The device of claim 1 wherein the membrane is a permeable polyolefin membrane.
4. **(Cancelled)**
5. **(Cancelled)**
6. **(Original)** The device of claim 1 wherein the device is substantially planar and comprises a plurality of substantially planar device layers.
7. **(Original)** The device of claim 1 wherein the plurality of device layers comprises adhesiveless polymeric layers that are interpenetrably bound together to form a substantially sealed microstructure.
8. **(Original)** The device of claim 7 wherein each device layer of plurality of device layers is substantially metal-free.
9. **(Original)** The device of claim 6 wherein the plurality of substantially planar device layers includes a plurality of stencil layers.

10. **(Previously presented)** The device of claim 9 wherein the porous membrane is disposed between at least two stencil layers of the plurality of stencil layers.
11. **(Original)** The device of claim 1 wherein the stationary phase material includes packed particulate matter.
12. **(Original)** The device of claim 1 wherein the microfluidic analytical device is adapted to withstand an internal pressure of at least about 100 psi and remain substantially sealed.
13. **(Previously presented)** A microfluidic analytical device comprising:
 - a plurality of microfluidic separation columns each containing stationary phase material;
 - a plurality of optical detection regions, each optical detection region of the plurality of optical detection regions being disposed downstream of and in fluid communication with a different microfluidic separation column of the plurality of separation columns, being substantially free of stationary phase material, and being bounded by at least one substantially optically transmissive material; and
 - at least one porous membrane disposed downstream of the plurality of optical detection regions, the at least one porous membrane permitting liquid flow therethrough at an operating pressure.
14. **(Original)** The device of claim 13, further comprising a fluidic distribution network in fluid communication with the plurality of microfluidic separation columns.
15. **(Original)** The device of claim 13 wherein the device is substantially planar and comprises a plurality of substantially planar device layers.
16. **(Original)** The device of claim 13 wherein the plurality of device layers comprises adhesiveless polymeric materials that are interpenetrably bound together to form a substantially sealed microstructure.

17. **(Previously presented)** The device of claim 16 wherein each device layer of the plurality of device layers is substantially metal-free.
18. **(Original)** The device of claim 15 wherein the plurality of device layers includes a plurality of stencil layers.
19. **(Previously presented)** The device of claim 18 wherein the at least one porous membrane is disposed between at least two stencil layers of the plurality of stencil layers.
20. **(Original)** An analytical system comprising:
the device of claim 13;
a fluidic distribution network in fluid communication with the plurality of microfluidic separation columns;
a common mobile phase supply source in fluid communication with the plurality of microfluidic separation columns through the fluidic distribution network;
at least one illumination source in optical communication with the plurality of optical detection regions; and
at least one optical detector in optical communication with the plurality of optical detection regions.
21. **(Previously presented)** A microfluidic device comprising:
a plurality of substantially planar device layers defining a separation region, an impedance region, and an optical detection region disposed in a fluid flow path between the separation region and the impedance region, the optical detection region being substantially free of stationary phase material and being bounded along at least one surface by a substantially optically transmissive material; and
a substantially planar porous membrane disposed between the first aperture and the second aperture, with the porous membrane permitting liquid flow therethrough and being adapted to permanently elevate the backpressure within the optical detection region.
22. **(Original)** The device of claim 21, further comprising at least one microfluidic separation column adapted to perform pressure-driven liquid chromatography, the separation column being disposed upstream of the optical detection region.

23. **(Original)** The device of claim 21 wherein the plurality of substantially planar device layers includes a plurality of stencil layers.

24. **(Previously presented)** A liquid chromatography system comprising:
a plurality of separation columns adapted to perform pressure-driven liquid chromatographic separation;
an illumination source;
an optical detector;
a plurality of optical detection regions disposed downstream of the plurality of separation columns, each optical detection region of the plurality of optical detection regions being in fluid communication with a different separation column of the plurality of separation columns, and each optical detection region being in optical communication with the illumination source and optical detector; and
at least one porous membrane disposed downstream of the plurality of optical detection regions and in fluid communication with the plurality of optical detection regions, the at least one porous membrane being adapted to elevate the backpressure within the plurality of optical detection regions.

25. **(Original)** The system of claim 24, further comprising a mobile phase supply system.

26. **(Previously presented)** The system of claim 24 wherein each separation column of the plurality of separation columns is microfluidic.

27. **(Cancelled)**

28. **(Cancelled)**

29. **(Cancelled)**

30. **(Cancelled)**

31. **(Cancelled)**

32. **(Cancelled)**

33. **(Cancelled)**

34. **(Cancelled)**